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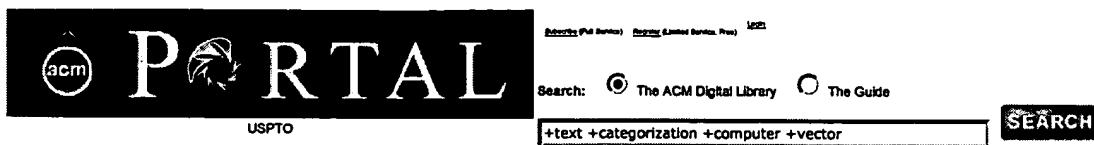
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1. **Question classification for e-learning by artificial neural network**  
 Ting Fei; Wei Jyh Heng; Kim Chuan Toh; Tian Qi;  
*Information, Communications and Signal Processing, 2003. Pacific Rim Conference on Multimedia. Proceedings of the Conference of the Fourth International Conference on*  
*Volume 3, 15-18 Dec. 2003 Page(s):1757 - 1761 vol.3*  
*Digital Object Identifier 10.1109/ICICS.2003.1292768*  
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2. **Text categorization using compression models**  
 Frank, E.; Chang Chui; Witten, I.H.;  
*Data Compression Conference, 2000. Proceedings. DCC*  
*28-30 March 2000 Page(s):555*  
*Digital Object Identifier 10.1109/DCC.2000.838202*  
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Published before September 2003  
Terms used: text categorization computer vector

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[A re-examination of text categorization methods](#)

August 1999

**Yiming Yang, Xin Liu**  
**Proceedings of the 22nd annual international ACM SIGIR conference on Research and development in information retrieval**

Publisher: ACM Press

Full text available: pdf (283.61 KB)

Additional Information: full citation, references, citations, index terms

[Special issue on special feature: Distributional word clusters vs. words for text categorization](#)

March 2003

**Ron Bekkerman, Ran El-Yaniv, Naftali Tishby, Yoad Winter**  
**The Journal of Machine Learning Research**, Volume 3

Publisher: MIT Press

Full text available: pdf (178.53 KB)

Additional Information: full citation, abstract, index terms

We study an approach to text categorization that combines distributional clustering of words and a Support Vector Machine (SVM) classifier. This word-cluster representation is computed using the recently introduced *Information Bottleneck* method, which

generates a compact and efficient representation of documents. When combined with the classification power of the SVM, this method yields high performance in text categorization. This novel combination of SVM with word-cluster representation ...

◆ **Text categorization: A repetition based measure for verification of text collections and for text categorization**

Dmitry V. Khmelev, William J. Teahan

July 2003

**Proceedings of the 26th annual international ACM SIGIR conference on Research and development in information retrieval**

Publisher: ACM Press

Full text available: [pdf \(197.26 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [citing](#), [index terms](#)

We suggest a way for locating duplicates and plagiarisms in a text collection using an *R-measure*, which is the normalized sum of the lengths of all suffixes of the text repeated in other documents of the collection. The R-measure can be effectively computed using the suffix array data structure. Additionally, the computation procedure can be improved to locate the sets of duplicate or plagiarised documents. We applied the technique to several standard text collections and found that they ...

**Keywords:** cross-entropy, language modeling, text categorization, text compression

◆ **Meaningful term extraction and discriminative term selection in text categorization via unknown-word methodology**

Yu-Sheng Lai, Chung-Hsien Wu

March 2002

**ACM Transactions on Asian Language Information Processing (TALIP)**, Volume 1 Issue 1

Publisher: ACM Press

Full text available: [pdf \(20.43 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

In this article, an approach based on unknown words is proposed for meaningful term extraction and discriminative term selection in text categorization. For meaningful term extraction, a phrase-like unit (PLU)-based likelihood ratio is proposed to estimate the

likelihood that a word sequence is an unknown word. On the other hand, a discriminative measure is proposed for term selection and is combined with the PLU-based likelihood ratio to determine the text category. We conducted several experim ...

**Keywords:** AC-machine, dimensionality reduction, discriminability, discriminative term selection, inconsistency problem, meaningful term extraction, n-gram, phrase-like unit, sparse data problem, term adaptation, term purification, text categorization, text indexing, unknown word detection, vector space modeling

Text categorization: A scalability analysis of classifiers in text categorization

Yiming Yang, Jian Zhang, Bryan Kisiel

July 2003

Proceedings of the 26th annual international ACM SIGIR conference on Research and development in information retrieval

Publisher: ACM Press

Full text available: [pdf \(242.81 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Real-world applications of text categorization often require a system to deal with tens of thousands of categories defined over a large taxonomy. This paper addresses the problem with respect to a set of popular algorithms in text categorization, including Support Vector Machines, k-nearest neighbor, ridge regression, linear least square fit and logistic regression. By providing a formal analysis of the computational complexity of each classification method, followed by an investigation on the u ...

**Keywords:** complexity analysis, hierarchical text categorization, power law

Feature selection, perception learning, and a usability case study for text categorization

Hwee Tou Ng, Wei Boon Goh, Kok Leong Low

July 1997

ACM SIGIR Forum, Proceedings of the 20th annual international ACM SIGIR conference on

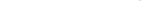
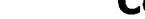
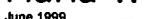
## Research and development in information retrieval SIGIR '97, Volume 31 Issue SI

Publisher: ACM Press

Full text available: [pdf \(1.45 MB\)](#)



Additional Information: [full citation](#), [references](#), [citing](#), [index terms](#)



1 Text categorization for multiple users based on  
semantic features from a machine-readable dictionary

Elizabeth D. Liddy, Woojin Paik, Edmund S. Yu

July 1994

**ACM Transactions on Information Systems  
(TOIS)**, Volume 12 Issue 3

Publisher: ACM Press

Full text available: [pdf \(11.17 MB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

The text categorization module described here provides a front-end filtering function for the larger DR-LINK text retrieval system [Liddy and Myaeing 1993]. The model evaluates a large incoming stream of documents to determine which documents are sufficiently similar to a profile at the broad subject level to warrant more refined representation and matching. To accomplish this task, each substantive word in a text is first categorized using a feature set based on the semantic Subject Field ...

**Keywords:** semantic vectors, subject field coding

10 Fast supervised dimensionality reduction algorithm  
with applications to document categorization &  
retrieval

George Karypis, Eui-Hong (Sam) Han

November 2000

**Proceedings of the ninth international  
conference on Information and knowledge  
management**

Publisher: ACM Press

Full text available: [pdf \(270.71 KB\)](#)

Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

11 Special section on data mining for intrusion detection  
and threat analysis: Mining e-mail content for author  
identification forensics

O. de Vel, A. Anderson, M. Corney, G. Mohay

December 2001

**ACM SIGMOD Record**, Volume 30 Issue 4

Publisher: ACM Press

Full text available: [pdf \(954.21 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We describe an investigation into e-mail content mining for author identification, or authorship attribution, for the purpose of forensic investigation. We focus our discussion on the ability to discriminate between authors

for the case of both aggregated e-mail topics as well as across different e-mail topics. An extended set of e-mail document features including structural characteristics and linguistic patterns were derived and, together with a Support Vector Machine learning algorithm, were ...

<sup>12</sup>  [Classification: Boosting to correct inductive bias in text classification](#) 

Yan Liu, Yiming Yang, Jaime Carbonell

November 2002

**Proceedings of the eleventh international conference on Information and knowledge management**

Publisher: ACM Press

Full text available:  pdf (169.02 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This paper studies the effects of boosting in the context of different classification methods for text categorization, including Decision Trees, Naive Bayes, Support Vector Machines (SVMs) and a Rocchio-style classifier. We identify the inductive biases of each classifier and explore how boosting, as an error-driven resampling mechanism, reacts to those biases. Our experiments on the Reuters-21578 benchmark show that boosting is not effective in improving the performance of the base classifiers ...

**Keywords:** boosting, inductive bias, machine learning, text classification

<sup>13</sup>  [Fast and accurate text classification via multiple linear discriminant projections](#) 

Soumen Chakrabarti, Shourya Roy, Mahesh V. Soundalgekar

August 2003

**The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 12 Issue 2

Publisher: Springer-Verlag New York, Inc.

Full text available:  pdf (156.38 KB)

Additional Information: [full citation](#), [abstract](#), [citations](#), [index terms](#)

**Abstract.** Support vector machines (SVMs) have shown superb performance for text classification tasks. They are accurate, robust, and quick to apply to test instances. Their only potential drawback is their training time and memory requirement. For  $n$  training instances held in memory, the best-known SVM implementations

take time proportional to  $n^a$ , where  $a$  is typically between 1.8 and 2.1. SVMs have been trained on data sets with several thousand instances, but Web direct ...

**Keywords:** Discriminative learning, Linear discriminants, Text classification

<sup>14</sup> [Text classification using string kernels](#)

Huma Lodhi, Craig Saunders, John Shawe-Taylor, Nello Cristianini, Chris Watkins

March 2002

**The Journal of Machine Learning Research**, Volume 2

Publisher: MIT Press

Full text available: [pdf \(216.07 KB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We propose a novel approach for categorizing text documents based on the use of a special kernel. The kernel is an inner product in the feature space generated by all subsequences of length  $\langle em\rangle k \langle /em\rangle$ . A subsequence is any ordered sequence of  $\langle em\rangle k \langle /em\rangle$  characters occurring in the text though not necessarily contiguously. The subsequences are weighted by an exponentially decaying factor of their full length in the text, hence emphasising those occurrences that are close to ...

**Keywords:** approximating kernels, kernels and support vector machines, string subsequence kernel, text classification

<sup>15</sup> [An example-based mapping method for text categorization and retrieval](#)

Yiming Yang, Christopher G. Chute

July 1994

**ACM Transactions on Information Systems (TOIS)**, Volume 12 Issue 3

Publisher: ACM Press

Full text available: [pdf \(1.76 MB\)](#)



Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

A unified model for text categorization and text retrieval is introduced. We use a training set of manually categorized documents to learn word-category associations, and use these associations to predict the categories of arbitrary documents. Similarly, we use a training set of queries and their related documents to

obtain empirical associations between query words and indexing terms of documents, and use these associations to predict the related documents of arbitrary queries. A Linear Le ...

**Keywords:** document categorization, query categorization, statistical learning of human decisions

<sup>16</sup> **Posters: Machine learning methods for Chinese web page categorization** 

Ji He, Ah-Hwee Tan, Chew-Lim Tan

October 2000

**Proceedings of the second workshop on Chinese language processing: held in conjunction with the 38th Annual Meeting of the Association for Computational Linguistics - Volume 12**

Publisher: Association for Computational Linguistics

Full text available:  pdf (706.21 KB)

Additional Information: [full citation](#), [abstract](#), [references](#)

This paper reports our evaluation of  $k$  Nearest Neighbor (kNN), Support Vector Machines (SVM), and Adaptive Resonance Associative Map (ARAM) on Chinese web page classification. Benchmark experiments based on a Chinese web corpus showed that their predictive performance were roughly comparable although ARAM and kNN slightly outperformed SVM in small categories. In addition, inserting rules into ARAM helped to improve performance, especially for small well-defined categories.

<sup>17</sup> **Machine learning in automated text categorization** 

 Fabrizio Sebastiani

March 2002

**ACM Computing Surveys (CSUR)**, Volume 34 Issue 1

Publisher: ACM Press

Full text available:  pdf (524.41 KB)

Additional Information: [full citation](#), [abstract](#), [references](#), [citing](#), [index terms](#)

The automated categorization (or classification) of texts into predefined categories has witnessed a booming interest in the last 10 years, due to the increased availability of documents in digital form and the ensuing need to organize them. In the research community the dominant approach to this problem is based on machine learning techniques: a general inductive process automatically builds a classifier by learning, from a set

of preclassified documents, the characteristics of the categories. ...

**Keywords:** Machine learning, text categorization, text classification

<sup>18</sup> [Hierarchical classification of Web content](#) 

 Susan Dumais, Hao Chen  
July 2000 **Proceedings of the 23rd annual international ACM SIGIR conference on Research and development in information retrieval**

Publisher: ACM Press  
Full text available: [PDF \(1.16 MB\)](#) Additional Information: [All citation](#), [Abstract](#), [References](#), [Citing](#), [Index terms](#)

This paper explores the use of hierarchical structure for classifying a large, heterogeneous collection of web content. The hierarchical structure is initially used to train different second-level classifiers. In the hierarchical case, a model is learned to distinguish a second-level category from other categories within the same top level. In the flat non-hierarchical case, a model distinguishes a second-level category from all other second-level categories. Scoring rules can further take ad ...

**Keywords:** Web hierarchies, classification, hierarchical models, machine learning, support vector machines, text categorization, text classification

<sup>19</sup> [Special issue on kernel methods: One-class svms for](#) 

## document classification

Larry M. Manevitz, Malik Yousef

March 2002

**The Journal of Machine Learning Research**, Volume 2

Publisher: MIT Press

Full text available: [pdf \(203.03 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [citations](#)



We implemented versions of the SVM appropriate for *one-class* classification in the context of information retrieval. The experiments were conducted on the standard *Reuters* data set. For the SVM implementation we used both a version of Schoelkopf et al. and a somewhat different version of one-class SVM based on identifying "outlier" data as representative of the second-class. We report on experiments with different kernels for both of these implementations and with different represe ...



## Text classification: Enhanced word clustering for hierarchical text classification

Inderjit S. Dhillon, Subramanyam Mallela, Rahul Kumar

July 2002

**Proceedings of the eighth ACM SIGKDD international conference on Knowledge discovery and data mining**

Publisher: ACM Press

Full text available: [pdf \(993.07 KB\)](#)

Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)



In this paper we propose a new information-theoretic divisive algorithm for word clustering applied to text classification. In previous work, such "distributional clustering" of features has been found to achieve improvements over feature selection in terms of classification accuracy, especially at lower number of features [2, 28]. However the existing clustering techniques are agglomerative in nature and result in (i) sub-optimal word clusters and (ii) high computational cost. In order to expli ...

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